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ABSTRACT

Project BRIDGES, a 3-year program conducted for students of limited English proficiency (LEP) at three High Schools in Brooklyn (New York City) sought to develop the English language, academic, and vocational skills of a high-risk LEP population. The native languages of the participating students were Haitian Creole, Spanish, Chinese, Hebrew, and Russian. Students received instruction in English as a Second Language (ESL) and mathematics, science, and social studies taught bilingually or using ESL methodology. Native Language Arts (NLA) were available in at least three languages at each site. Students enrolled in mainstream classes for art, music, physical education, and business and vocational subjects. Project BRIDGES met its ESL and English reading objectives as well as its objectives in NLA, science, social studies, and business and vocational subjects. The program also achieved its objectives in staff development, parental involvement, mathematics, and student attendance rates. (GLR)

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OREA Report

EVALUATION SECTION REPORT

BILINGUAL RESOURCE INSTRUCTION FOR THE DEVELOPMENT OF GAINFUL EMPLOYMENT SKILLS PROJECT BRIDGES

Grant Number G008635376

1988-89

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EVALUATION SECTION
John E. Schoener, Chief Administrator
April 1990

EVALUATION SECTION REPORT

BILINGUAL RESOURCE INSTRUCTION FOR THE DEVELOPMENT OF GAINFUL EMPLOYMENT SKILLS PROJECT BRIDGES

Grant Number G008635376

1988-89

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BILINGUAL RESOURCE INSTRUCTION FOR THE DEVELOPMENT OF GAINFUL EMPLOYMENT SKILLS (PROJECT BRIDGES) 1988-89

SUMMARY

Project BRIDGES was fully implemented. During the 1988-89 school year, project students received instruction in English as a Second Language, Native Language Arts, content areas, and business and vocational subjects.

Project BRIDGES met its objectives in English as a Second Language; English reading; Native Language Arts; content area; business and vocational subjects; staff development; parental involvement; and attendance rate.

Bilingual Resource Instruction for the Development of Gainful Employment Skills (Project BRIDGES) was an Elementary and Secondary Education Act (E.S.E.A.) Title VII-funded program of instructional and support services. In the third year of a three-year funding cycle, the project served students of limited English proficiency (LEP) at South Shore, Sheepshead Bay, and Franklin Delano Roosevelt High Schools in Brooklyn. The native languages of the participating students were Haitian Creole, Spanish, Chinese, Hebrew, and Russian. The project sought to develop the English language, academic, and vocational skills of a high-risk LEP population.

Project students received instruction in English as a Second Language (E.S.L.) and mathematics, science, and social studies taught bilingually or using E.S.L. methodology. Native Language Arts (N.L.A) courses were available in at least three languages at each site. Students enrolled in mainstream classes for art, music, physical education, and business and vocational subjects.

The project's noninstructional component included guidance and counseling, career education, tutoring, extracurricular activities, staff and curriculum development, and parental involvement.

Project BRIDGES met its objectives for E.S.L. and English reading, as students made statistically significant gains in the LAB and the D.R.P. It also met its objectives in Native Language Arts, science, social studies and business and vocational subjects, since more than 70 percent of the students scored above the passing criterion of 65. The project achieved its mathematics objective, as a higher percentage of participating students than non-program students passed their courses. The project also achieved its staff development, parental involvement, and student attendance rate objectives.

Thus, Project BRIDGES was a highly successful program, fulfilling the important role of preventing student drop-out. The project had several strong components, among which the support services, particularly tutoring, seemed particularly effective. South Shore High School for instance, used Brooklyn College students at tutors.

The conclusions, based on the findings of this evaluation, lead to the following recommendations:

- Seek ways in which to increase parental involvement, by assessing their needs and interests.

- Other sites might consider emulating South Shore High School's use of college students as tutors.

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I. INTRODUCTION

This report documents the Office of Research, Evaluation, and Assessment's (OREA's) evaluation of the Elementary and Secondary Education Act (E.S.E.A.) Title VII program, Bilingual Resource Instruction for the Development of Gainful Employment Skills (Project BRIDGES). During the 1988-89 school year, the project completed the third year of a three-year funding cycle. Project BRIDGES provided instructional and support services to students of limited English proficiency (LEP) who were at high risk of dropping out.

HISTORY OF THE PROGRAM

Previous evaluation reports of Project BRIDGES presented the history of bilingual education at the three participating schools as well as a full description of the earlier years of the program.

SETTING

The participating schools were all located in Brooklyn neighborhoods that have always attracted large immigrant populations, and the schools have strong records of service to non-English-speaking students.

PARTICIPATING STUDENTS

Project BRIDGES served 429 students at South Shore, Sheepshead Bay, and Franklin D. Roosevelt High Schools. Students came from all over the world--the Caribbean, Asia, the Middle East, Central and South America, and Europe.

All participating students were LEP, and the majority were recent immigrants. They demonstrated varying amounts of proficiency in the English language. Some students had received relatively little formal education in their country of origin and were illiterate in their native language. Others had had more schooling and had relatively good academic skills. Haitian Creole- and Spanish-speaking students from the Caribbean often had difficulty in content areas, while those from South America and Israel were better grounded academically.

Students participated in the program for a period of one to three years. The largest number of students were in the tenth grade. Approximately half were over-age for their grade placement. (See Table 1.) The majority of students who left the program did so to enter the mainstream.

STAFF

The Title VII-funded staff of Project BRIDGES included a project director, site coordinators at two sites (Franklin D. Roosevelt and Sheepshead Bay High Schools), a resource teacher/guidance counselor, a paraprofessional, and a secretary. The project director and site coordinators held master's degrees. The project director spoke Spanish and Hebrew; one of the coordinators spoke Italian and Spanish and the other Spanish, French, Haitian Creole, and Russian; the resource teacher/guidance counselor spoke French and Haitian Creole. Site coordinators taught two periods a day; all other staff worked fulltime.

TABLE 1

Number of Students by Age and Grade*

Age	Grade 9	Grade 10	Grade 11	Grade 12	Total
13	1	1			2
14	15	2			17
15	39	21	1		61
16	34	44	14		92
17	12	36	27	13	88
18	9	18	28	29	84
19	2	12	8	20	42
20		3	12	15	30
21		1	3	6	10
22			2	1	3
Total	112	138	95	84	429

Over-Age Students Programwide

Number	57	70	53	42	222
Percent	50.9	50.7	55.8	50.0	51.7

*As of June 1989

- Most participating students were in the tenth grade.
- In every grade, approximately half of the students were over-age for their grade.

Project BRIDGES functioned under the auspices of Brooklyn's Superintendent of High Schools. In her capacity as the Superintendent's representative, the principal of South Shore High School supervised Project BRIDGES' project director. The project staff at South Shore High School reported to the project director. The project director and the assistant principals for foreign languages at Sheepshead Bay and Franklin D. Roosevelt High Schools jointly supervised the site coordinators. Depending on the site, teachers of project students variously reported to the bilingual/E.S.L. department, the foreign language department, or the content area departments.

DELIVERY OF SERVICES

Students received instruction in E.S.L.; N.L.A., where available; and in mathematics, science, and social studies taught bilingually or with E.S.L. methodology. Each school offered project students a full range of business education and industrial arts courses in English.

Project BRIDGES provided guidance and counseling, tutoring, staff and curriculum development, and parental involvement activities.

REPORT FORMAT

This report is organized as follows: Chapter II explains the evaluation methodology; Chapter III describes the project's implementation and evaluates its objectives; Chapter IV looks at outcomes; and Chapter V offers conclusions and recommendations based upon the results of the evaluation.

II. EVALUATION METHODOLOGY

EVALUATION QUESTIONS

The evaluation assessed two major areas: program implementation and outcomes. Evaluation questions included the following:

Process/Implementation

- Did the program select students for participation according to specific criteria?
- Did the project implement the instructional activities for developing native language skills as proposed?
- Did the project provide the in-service staff development activities as proposed?

Outcome

- What was the average Normal Curve Equivalent (N.C.E.) gain on the LAB?
- What percentage of program students passed their N.L.A. courses?
- What percentage of program students passed their business/vocational and computer skills courses?
- How did the attendance rate of program students compare with that of mainstream students?
- How did the dropout rate of program students compare with that of mainstream students?

EVALUATION PROCEDURES

Sample

An OREA field consultant visited two program sites. She observed four classes and interviewed the program director, two principals, and the site coordinators. OREA provided student

data forms for all participants and received 429 completed forms from the project.

Instruments

OREA developed interview and observation schedules for the use of the field consultant and a questionnaire for the project director. Project personnel used OREA-developed data retrieval forms to report student demographic, attendance, and achievement data.

Data Collection

The consultant interviewed program staff during March and observed classes during March and April. OREA distributed student data forms and the project director's questionnaire in December and April and collected them at the end of June.

Data Analysis

OREA used the Language Assessment Battery to assess improvement in English proficiency. Project BRIDGES students were tested at grade level each spring. Students' raw scores were converted to Normal Curve Equivalent (N.C.E.) scores, which have multiple advantages over other scoring methods. They are standard, normalized, and form an equal interval scale. ("Standard" indicates that the unit of measurement is a fraction of the standard deviation of the original distribution of raw scores; "normalized" refers to the fact that the scale is adjusted for the norm group so that its distribution has the shape of a normal distribution; and "equal interval scales" allow

for legitimate aggregation or averaging of scores.) Project students' N.C.E.s indicated their standing in relation to the national average of 50.

To assess the significance of students' achievement in English, OREA computed a correlated *t*-test on LAB N.C.E. scores. The *t*-test determined whether the difference between the pre- and posttest scores was significantly greater than would be expected by chance variation alone.

To insure representative achievement data, OREA included only those students who had been in the program for at least five months and had attended classes for at least 100 school days. OREA extrapolated to estimate full-year scores of late-arriving and early-exiting students.

Limitations

Since all LEP students are entitled to receive bilingual and E.S.L. services, OREA was unable to select an equivalent control group. However, the use of two sets of data, as outlined above, served in lieu of a control group.

III. EVALUATION FINDINGS: IMPLEMENTATION

Project BRIDGES provided LEP students with E.S.L. instruction; N.L.A.; mathematics, science, and social studies taught bilingually or with E.S.L. methodology; and mainstream (monolingual) business and vocational subjects. The project offered guidance and counseling, career education, tutoring, extracurricular activities, curriculum and staff development, and activities for parental involvement.

STUDENT PLACEMENT AND PROGRAMMING

Project BRIDGES served LEP students, whose status was determined by the Language Assessment Battery (LAB)*. Since the project targeted students at high risk, any LEP student who had a poor academic record, was over-age for grade placement, had experienced severe gaps in schooling, or appeared to be at risk of dropping out of school, could participate in the program.

INSTRUCTIONAL ACTIVITIES

The project carried out instructional activities in E.S.L., N.L.A., content areas, and business/vocational subjects.

English as a Second Language

Each school offered E.S.L. reading and writing courses at

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*The Language Assessment Battery (LAB) was developed by the Board of Education of the City of New York to measure the English-language proficiency of non-native speakers of English in order to determine whether they can participate effectively in classes taught in English. Students scoring below the twenty-first percentile on the LAB are entitled to bilingual and E.S.L. services.

beginning, intermediate, advanced, and transitional levels. Franklin D. Roosevelt High School also offered an E.S.L. class in reading, writing, and speaking to students who had been mainstreamed. All sites provided beginning E.S.L. students with three periods of E.S.L. a day; intermediate, advanced, and transitional E.S.L. students had two periods daily. Paraprofessionals and/or peer tutoring provided students with assistance as needed.

At Franklin D. Roosevelt High School, the OREA field consultant observed a beginning E.S.L. class of 23 students. Students wrote the months and seasons in their notebooks and on the board, then recited them aloud. The teacher followed up with questions, then handed out a mimeographed worksheet with pictures of typical scenes in a working person's day and asked individual students about them. The teacher asked five true/false questions for the students to answer in their notebooks.

At South Shore High School, the OREA consultant observed an advanced E.S.L. class of 14. The teacher asked the students to locate three vocabulary words in the text of a story they had been reading and to read the sentences containing them. She then asked questions about the content of passages the students had read for homework and called on students to read from the text, correcting their pronunciation. Students also responded to true/false statements in the exercise book. The teacher divided the class into two groups, each of which worked on a solution to

a hypothetical emergency situation similar to one in the story. The leader of each group presented the group's solution and answered questions posed by the teacher.

Native Language Arts

Sheepshead Bay High School offered Spanish, French, and Chinese N.L.A. Franklin D. Roosevelt High School offered Spanish, Hebrew, Russian, and Chinese N.L.A. South Shore High School offered Spanish, French, and Haitian Creole N.L.A.

Content Area Subjects

All schools offered courses in mathematics, science, and social studies using E.S.L. methodology. The Title VII paraprofessional assisted at South Shore High School with Spanish and Haitian Creole translations. Sheepshead Bay High School offered bilingual (Chinese) science and social studies. Franklin D. Roosevelt High School offered Chinese bilingual classes in mathematics and science and Spanish bilingual classes in science and social studies.

The OREA field consultant observed an E.S.L. global studies class at South Shore High School. The teacher, paraprofessional, and a health aide worked with the 25 students present. The lesson was a comparison of Vietnam with its neighbors. The teacher began the lesson by asking what students knew about Vietnam. After summarizing the responses of several volunteers, the students formed four groups in preparation for a map study session. The teacher distributed world atlases to the students

and asked them to find the map of Asia and Vietnam. She then handed out mimeographed outline maps of the Asian continent and asked the students to fill in the names of its countries. The teacher and other staff members circulated, assisting the students. After reviewing the work, the teacher handed out a worksheet containing a chart with population statistics for Southeast Asia, and the students answered true-false questions based on the chart.

Business and Vocational Subjects

Each school offered a full range of English-language business education and industrial arts courses. These included computer literacy, typing, office machines, accounting, keyboarding, auto mechanics, wood shop, metal shop, and drafting. In addition to these courses, Franklin D. Roosevelt High School offered a keyboarding course for Spanish-speakers, and Sheepshead Bay High School offered a special E.S.L. reading-through-typing course.

Tutoring

At all three sites, bilingual or monolingual paraprofessionals provided project students with individual and small-group tutoring. Eleventh and twelfth grade students also provided peer tutoring to students with similar backgrounds in the grades below them.

During the fall semester, the project director instituted a program at South Shore High School using Brooklyn College

mathematics and science students as tutors. The college students tutored, and also trained high school seniors to tutor, program students. According to the project director, the tutoring (most of which was in mathematics) had a positive effect on the academic performance of participating students.

NONINSTRUCTIONAL ACTIVITIES

The project proposed noninstructional implementation objectives in staff development and parental involvement.

Staff Development

- By the conclusion of the three-year project period, 75 percent of project staff and instructional personnel will have completed master's degrees in areas relevant to their roles in the program.
- Project staff will attend professional conferences and after-school workshops in order to keep abreast of the developments in the field.
- During the three-year project period, and subsequently, project staff will conduct training activities for teachers and administrators serving similar populations in other schools.

Nineteen instructional personnel and project staff members received master's degrees by the end of the third project year. This represented 90 percent of the staff involved. Project BRIDGES met the first staff development objective.

All project staff participated in monthly project staff meetings, E.S.L. and foreign language department meetings, and schoolwide faculty conferences. Project staff attended several off-site training activities, including an E.S.L. book fair, a bilingual career day, and a workshop on bilingualism and special

education. Project staff also enrolled in a variety of university courses during both semesters. Project BRIDGES met its second staff development objective.

The project director was a turnkey trainer for training professional staff in identifying at-risk students. At the invitation of the Office of Bilingual Education and Minority Language Affairs (OBEMLA), the director addressed a Title VII Management Conference in Washington, D.C. He also conducted workshops and addressed several audiences describing the project to administrators of junior high schools and high schools. He participated in the training of new principals and gave a model lesson for non-tenured principals at South Shore High School. Project BRIDGES met its third staff development objective.

Parental Involvement

- By the conclusion of the three-year project period, a network of communications will be established between the program, the school, parents, and community agencies that will assist the grantee in reading program objectives.
- The program will be recognized as a catalyst for improved parent/school communication and a resource to new immigrant families.

Project staff made efforts to stimulate parental involvement, and while attendance at parent functions was low, the project fulfilled a vital role as the schools' main contact with foreign-born population.

At South Shore High School, between eight and twelve parents came to the four Parent Advisory Council (PAC) meetings held during the academic year. Ten parents attended the orientation

meeting, which described the program and advised of issues regarding the management of the project. At Sheepshead Bay High School, the site coordinator and the guidance counselor met individually with students' parents and contacted parents by phone. At Franklin D. Roosevelt High School, 18 parents attended the school's spring orientation for incoming bilingual students and their parents. Twelve parents attended parent-teacher conferences in the fall, and 15 attended in the spring.

At all sites, project staff met individually with students' parents regarding such matters as placement, discipline problems, or need for special education. The project also maintained communication with parents through phone and mail, and Franklin D. Roosevelt High School also sent families multilingual newsletters. Project BRIDGES acted as a referral source for parents in matters dealing with health care, employment, schooling for siblings, and other concerns brought to the attention of project staff.

Therefore, Project BRIDGES met both of its parental involvement objectives.

Support Services

To reduce student attrition and promote better attendance, the project's noninstructional component incorporated a number of supportive strategies, including academic guidance, personal counseling, career education, tutoring, and extracurricular activities.

Guidance and Counseling. Project and non-project staff provided guidance and counseling services to project students at the three sites. Students tended to approach project staff more frequently than mainstream staff, since the former were more familiar with the students and usually spoke their native language. If no staff member was conversant with a student's native language, another student translated. This occurred most frequently at South Shore High School, which had a sizeable Chinese-speaking population but no Chinese-speaking staff.

At Franklin D. Roosevelt High School, six staff members provided academic and personal counseling, college advisement and career orientation, and contacted families as necessary. Five of the staff spoke at least one of the project students' native languages.

At South Shore High School, one bilingual and one monolingual guidance counselor as well as the project director provided academic and personal counseling. A Haitian Creole-speaking N.L.A. teacher also provided career and academic counseling. An itinerant social worker provided counseling on AIDS, pregnancy, and drug addiction. Three bilingual educational assistants contacted families as necessary.

At Sheepshead Bay High School, the coordinator and guidance counselor contacted families and also provided students with academic, college, and personal counseling. The project coordinator and the work-experience and job-development

coordinators provided career orientation. The job-development coordinator also provided placement services.

At all sites, project personnel implemented a variety of strategies to help students overcome adjustment difficulties. For example, South Shore High School initiated a "big brother/big sister" program in which it paired experienced students with incoming students of the same ethnic background. Franklin D. Roosevelt High School also provided new Korean students with a "buddy system."

IV. EVALUATION FINDINGS: OUTCOMES

INSTRUCTIONAL ACTIVITIES

The project proposed instructional objectives for E.S.L., English reading, N.L.A., content areas, and business/vocational subjects.

English as a Second Language

The evaluation objective for the development of English language skills was:

- As a result of participating in the program, E.S.L. students will make statistically significant gains in English language proficiency.

Pretest and posttest LAB N.C.E. scores were available for 218 students. Overall, and in the ninth, tenth, and eleventh grades, students showed statistically significant ($p<.05$) gains. (See Table 2.) Of the participating schools, Sheepshead Bay High School and South Shore High School showed significant gains. Franklin D. Roosevelt High School also showed gains, although these were not statistically significant. However, considering that project students at this school are chosen among a population with chronic academic difficulties, even a small gain is meaningful. Project BRIDGES met its E.S.L objective.

English Reading

The evaluation objective for the development of English reading skills was:

- As a result of participating in the program, English proficient students will show significant gains in English reading achievement.

TABLE 2

Pretest/Posttest N.C.E. Differences on
Language Assessment Battery, by Grade and Site

Grade	Number of Students	Pretest Mean	Pretest S.D.	Posttest Mean	Posttest S.D.	Difference Mean	Difference S.D.	t value
9	45	10.7	11.7	17.4	15.1	6.7	13.7	3.29*
10	68	14.0	9.6	23.8	16.6	9.7	15.9	5.07*
11	57	16.4	11.2	22.3	14.1	5.9	9.8	4.00*
12	46	17.2	9.0	16.1	11.1	-1.1	9.0	-.85
School								
Sheepshead Bay	76	15.0	11.1	23.5	17.0	8.5	16.9	4.41*
F. D. Roosevelt	68	15.2	10.3	16.9	13.8	1.6	9.7	1.39
South Shore	72	13.7	10.3	20.5	12.6	6.8	10.5	5.48*
TOTAL	216	14.6	10.6	20.4	14.8	5.8	13.2	6.45*

*$p<.05$

- The mean gain demonstrated by project students was more than five N.C.E.s.
- N.C.E. gains were significant overall and at two of the three sites.

Program personnel used the Degrees of Reading Power (D.R.P.) test* to assess the English reading objective. Pre- and posttest scores were available for 40 students. Overall, and at each site, students showed significant improvement ($p<.05$) in reading achievement. (See Table 3.) Project BRIDGES met its English reading objective.

Native Language Arts

The evaluation objective for N.L.A. was:

- At least 70 percent of the students enrolled in native language arts instruction will score at or above the passing criterion of 65.

Over 70 percent of the students attained the passing criterion both semesters at South Shore and Sheepshead Bay High Schools. (See Table 4.) Overall, 73 percent of the students achieved the passing rate, therefore Project BRIDGES met its N.L.A. objective.

Content Area Subjects

- At least 70 percent of the students will score at or above the passing criterion in social studies and science classes each semester.
- Students participating in the program will score at or above the passing criterion of 65 in mathematics at a rate that is equal to or greater than that of similar non-program students.

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*The Degrees of Reading Power test (TASA Inc., 1986) was developed by the College Board to provide information about students' reading ability as measured by a scale for determining textbook readability.

TABLE 3

Pretest/Posttest N.C.E. Differences on the Degrees of Reading Power Test, by Site

High School	Number of Students	Pretest		Posttest		Difference		t
		Mean	S.D.	Mean	S.D.	Mean	S.D.	value
Sheepshead Bay	20	21.9	8.6	30.9	9.0	9.0	9.11	4.42*
F.D. Roosevelt	12	17.3	7.8	32.3	20.6	15.0	19.0	2.73*
South Shore	8	25.5	9.9	34.5	12.9	9.0	6.3	4.04*
TOTAL	40	21.2	8.9	32.0	13.8	10.8	12.5	5.45*

* $p<.05$

- Students at all sites showed significant pretest/posttest gains on the D.R.P.

TABLE 4

Native Language Arts Course Passing Rates

High School	Fall		Spring		Total	
	Number of Students	Percent Passing	Number of Students	Percent Passing	Number of Students	Percent Passing
Sheepshead Bay	44	72.7	25	68.0	69	71.0
F.D. Roosevelt	34	64.7	20	70.0	54	66.7
South Shore	7	100.0	12	100.0	19	100.0
TOTAL	85	71.8	57	75.4	142	73.2

- Over seventy percent of the students passed their N.L.A. courses at all sites except Franklin D. Roosevelt High School in the fall.
- All N.L.A. students at South Shore High School passed their courses both semesters.

Overall, seventy percent of the students passed social studies and science both semesters. (See Table 5.) Project BRIDGES met its first content area objective.

In order to assess the second objective, program students were compared with mainstream students enrolled for the Regents Competency Tests (R.C.T.s.). Project staff reported that the level of difficulty in mathematics courses taken by participating students was similar to pre-R.C.T. courses. Results show that overall and for each site, project students' performance was better than non-program students'. (See Table 6.) Thus, Project BRIDGES achieved its mathematics objective.

Business and Vocational Subjects

- At least 70 percent of students will score at or above the passing criterion in computer skills and/or vocational courses each semester/year.

Project students had an excellent performance record in business and vocational courses. (See Table 7.) At all sites more than 70 percent of the participating students reached the passing criterion both semesters. Thus, Project BRIDGES met its business and vocational subjects objective.

NONINSTRUCTIONAL ACTIVITIES

The project proposed noninstructional objectives in attendance and dropout rate.

TABLE 5

Content Area Subject Passing Rates

High School	Content Area	Fall		Spring		Total	
		Number of Students	Percent Passing	Number of Students	Percent Passing	Number of Students	Percent Passing
Sheepshead Bay	Science	54	83.3	68	77.9	122	80.3
	Social Studies	90	83.3	96	77.1	186	80.1
F.D. Roosevelt	Science	73	63.0	65	56.9	138	60.1
	Social Studies	89	75.3	84	65.5	173	70.5
South Shore	Science	62	69.4	45	75.6	107	72.0
	Social Studies	56	83.9	74	87.8	130	86.2
TOTAL	Science	189	70.9	178	69.7	367	70.3
	Social Studies	235	80.4	254	78.0	489	79.1

- At Sheepshead Bay and South Shore High Schools over 70 percent of the students passed science and social studies both semesters.
- At F.D. Roosevelt High School over 70 percent of students passed social studies in the fall semester.

TABLE 6

Mathematics Results of Program vs Mainstream Students

High School	Semester	Program Students		Mainstream Students	
		Number Enrolled	Percent Passing	Number Enrolled	Percent Passing
Sheepshead Bay	Fall	75	69.3	392	54.3
	Spring	80	66.3	363	46.3
	Total	155	67.7	755	50.5
F.D. Roosevelt	Fall	98	65.3	482	49.6
	Spring	69	40.6	266	51.5
	Total	167	55.1	748	50.3
South Shore	Fall	96	75.0	226	63.3
	Spring	84	69.0	98	36.7
	Total	180	72.2	324	55.2
TOTAL	Fall	269	69.9	1,100	54.1
	Spring	233	59.7	727	46.9
	Total	502	65.1	1,827	51.2

- Overall, 65 percent of program students passed their mathematics courses.
- Overall, 51 percent of mainstream students passed their pre-R.C.T. courses.

TABLE 7

Business and Vocational Course Passing Rates

High School	Fall		Spring	
	Number of Students	Percent Passing	Number of Students	Percent Passing
Sheepshead Bay	36	88.9	37	89.2
F.D. Roosevelt	32	84.4	19	73.7
South Shore	46	84.8	25	80.0
TOTAL	114	86.0	81	82.7

- Over 70 percent of participating students passed their business and vocational courses.
- Almost 90 percent of students at Sheepshead Bay High School achieved the passing rate in these courses.

Attendance

The evaluation objective for attendance was:

- As a result of participating in the program, students' attendance will be significantly higher than the attendance of mainstream students.

OREA measured the statistical significance of difference between the program and mainstream students' attendance through the application of the *z*-test. The *z*-test determines whether the difference between one population (the program attendance rate) and the standard (the schoolwide attendance rate) is greater than cam be expected by chance variation.

While Franklin D. Roosevelt High School's attendance rate did not show a statistically significant difference, the attendance rate of program students overall was 90.6, significantly higher ($p<.05$) than the attendance rate of mainstream students; Project BRIDGES met its attendance objective.

Dropout Rate

- Program students will have a significantly lower dropout rate than mainstream students.

Project BRIDGES' dropout rate was 5.3 percent. Mainstream dropout rates for the 1988-89 school year were not available. However, the schools' dropout rate during the 1987-88 school year ranged from 4.1 percent for South Shore High School to 5.8 percent for Sheepshead Bay High School. Assuming this percentage did not change radically the following year, it appears that Project BRIDGES failed to meet its dropout rate objective.

V. CONCLUSIONS AND RECOMMENDATIONS

During its third year of operation, Project BRIDGES provided services to LEP students at high risk of dropping out.

The project had the full support of the administration and faculty at each site. The principal of Franklin D. Roosevelt High School spoke of her efforts to recruit bilingual staff and of an anticipated program for Chinese-speaking students. The principal at South Shore High School praised the program as invaluable not only to participants but to the school as a whole.

Project BRIDGES met all its objectives. Students made statistically significant gains in the LAB and the D.R.P. to achieve the objectives for E.S.L. and English reading. The project also met its objectives in Native Language Arts, science, social studies, and business and vocational subjects, as more than 70 percent of the students scored above the passing criterion of 65. The project achieved its mathematics objective, as a higher percentage of participating students than non-program students passed their courses. Similarly, the project achieved its staff development, parental involvement, and students' attendance rate objectives.

Project BRIDGES' accomplishment of all its objectives indicates the quality of services it provided. Among the most effective components of the program were its support services--guidance, counseling, and particularly tutoring.

The conclusions, based on the findings of this evaluation,

lead to the following recommendations:

- After assessing parental needs and interests, seek ways in which to increase their involvement.

- Other sites might consider emulating South Shore High School's use of college students as tutors.